WE CLAIM:

1.   A method for implementing functionality within a network on behalf of first and second computers communicating with each other through the network, the method comprising the acts of:

   providing a front-end computer within the network having an interface for communicating data traffic with the first computer;

   providing a back-end computer within the network having an interface for communicating data traffic with the second computer;

   providing a communication channel coupling the front-end computer and the back-end computer; and

   encoding data traffic over the communication channel in a first process in the front-end computer;

   encoding data traffic over the communication channel in a second process in the back-end computer, wherein the first process and the second process implement compatible semantics.

2.   The method of claim 1 wherein the processes implemented in the front-end and back-end computer are characterized in that they operate above an OSI-model network layer.

3.   The method of claim 1 wherein the processes implemented in the front-end and back-end computer operate at a user-level.

4.   The method of claim 1 wherein the act of encoding comprises:

   communicating quality of service information about the communication channel between the front-end and back-end computers.

5. The method of claim 1 wherein the act of encoding comprises:

communicating time-base synchronization information between the front-end computer and the back-end computer.

6. The method of claim 1 wherein the act of encoding comprises compression/decompression processes.

7. The method of claim 1 wherein the act of encoding comprises encryption/decryption processes.

8. The method of claim 1 wherein the act of encoding comprises forward error correction processes.

9 A system for transporting data through a network comprising:

a plurality of client applications generating requests for network services;

a plurality of network servers configured to provide services in response to received requests;

a front-end server within the network having a first interface configured to handle request/response traffic with the client applications;

a back-end server within the network having a first interface configured to handle request/response traffic with a selected set of network servers;

a communication channel through the network between the front-end web server and the back-end web server.

10. The system of claim 9 wherein the front-end server and back-end server are time synchronized and the back-end server comprises means for ascertaining when a request/response was issued by the front-end server.

11. The system of claim 9 wherein the front-end server and back-end server are time synchronized and the

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front-end server comprises means for ascertaining when a request/response was issued by the back-end server.

12. The system of claim 9 wherein the front-end server and back-end server include compression mechanisms for compressing traffic transported across the communication channel.

13. The system of claim 9 wherein the front-end server and back-end server include encryption mechanisms for encrypting traffic transported across the communication channel.

14. The system of claim 9 wherein the front-end server and back-end server include forward error correcting mechanisms for error correcting traffic transported across the communication channel.

15. A system for transporting data through a network comprising:

a plurality of network-connected applications generating requests for network services;

5   a plurality of network-connected computers configured to provide services in response to received requests;

a plurality of front-end computers each having at least one interface configured to handle request/response
10   traffic with the network-connected applications;

a plurality of back-end web computers each having at least one interface configured to handle request/response traffic with a selected set of the network-connected computers; and

15   a many-to-many communication channel through the network between the front-end web computers and the back-end web computers.

16. The system of claim 15 wherein the many-to-many communication channel is dynamically re-configurable.

17. A system for transporting data through a network comprising:

a plurality of client applications generating requests for network services;

a plurality of network servers configured to provide services in response to received requests;

a front-end web server having at least one interface configured to handle request/response traffic with the client applications;

a plurality of back-end web servers each having at least one interface configured to handle request/response traffic with a selected set of network servers; and

a one-to-many communication channel through the network between the front-end web server and the back-end web servers.

18. A system for transporting data through a network comprising:

a plurality of client applications generating requests for network services;

a plurality of network servers configured to provide services in response to received requests;

a front-end web server having at least one interface configured to handle request/response traffic with the client applications;

a one-to-many communication channel through the network between the front-end web server and the network servers.

19. A data transport mechanism comprising:

an interface for communicating data with a plurality of data transport links;

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a blender operable to multiplex the data from the plurality of data transport links into a shared-bandwidth channel.

20. The transport mechanism of claim 19 wherein the plurality of data transport links comprise fixed-bandwidth links.

21. The transport mechanism of claim 19 wherein the plurality of data transport links comprise a homogenous set of user-level protocols.

22. The transport mechanism of claim 19 wherein the plurality of data transport links comprise a heterogeneous set of user-level protocols.

23. The transport mechanism of claim 19 wherein the plurality of data transport links comprise a homogenous set of transport layer protocols.

24. The transport mechanism of claim 19 wherein the plurality of data transport links comprise a heterogeneous set of transport layer protocols.

25. The transport mechanism of claim 19 wherein the plurality of data transport links comprise a homogenous set of physical layer protocols.

26. The transport mechanism of claim 19 wherein the plurality of data transport links comprise a heterogeneous set of physical layer protocols.

27. The transport mechanism of claim 19 wherein the shared bandwidth channel pools channel maintenance overhead over the plurality of data transport links.

28. The transport mechanism of claim 19 wherein the shared bandwidth channel composes data packets by

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selecting data from the plurality of data transport links.

29. The transport mechanism of claim 19 wherein the blender regulates a portion of the shared bandwidth allocated to particular one the plurality of data transport links by controlling the rate at which data from the particular link is placed into the data packets during composition.

30. The transport mechanism of claim 19 wherein the blender regulates a portion of the shared bandwidth allocated to particular one the plurality of data transport links by controlling the order at which data from the particular link is placed into the data packets during composition.

31. A data transport mechanism comprising:

an interface for communicating data with a plurality of data transport links;

a blender operable to combine the data from the plurality of data transport links into a shared-bandwidth channel; and

means for applying rate control to the shared-bandwidth channel such that rate control is aggregated across all of the plurality of data transport links

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